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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SEDIGHIAN, REZA	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/904,289	PARKER, STEVEN E.	
	Examiner	Art Unit	
	M. R. Sedighian	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/25/05 and 1/9/06* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This communication is responsive to applicant's 1/9/06 amendments and remarks. The amendments have been entered. Claims 1-4 and 6-27 are now pending.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-4, and 7-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lindsey et al. (US Patent No: 6,226,296).

Regarding claims 1, 4, 7, and 13, Lindsey teaches a method of communicating audio information among a plurality of audio devices (col. 13, lines 58-64, col. 14, lines 30-32), comprising: providing at least one interconnect hub (for example, node 1100, figs. 10, 11); providing a plurality of audio connection devices (each node 1100, 1200, and 1300 has audio/video units 1111, respectively, such as the one shown in fig. 11) each of which is configured to connect to a plurality of separate audio signal sources and which is configured to provide communications among these separate audio sources (col. 13, lines 61-66, note that node 1100 receives video signals and T1 signals, for example from sources such as the ones shown in fig. 10); connecting the at least one interconnect hub (1100, figs. 10, 11) to the plurality of audio connection devices (col. 14, lines 29-32, note that interconnect hub 1100 is connected to respective nodes 1200 and 1300, each having an audio connection device such as audio/video

unit 1111) to form a ring network (1150, fig. 10) of audio connection devices (the audio connection devices 1111 in each node 1100, 1200, 1300 of the ring network 1400) with the interconnect hub at the center of the ring network in a star configuration (col. 14, lines 33-40, node 1100 can be considered as an interconnect hub that is placed at the center of ring network 1400), wherein the audio connection devices connect to each other through the at least one interconnect hub (the audio connection devices of each node are connected to each other through the ring network 1400); digitizing (1123, fig. 11) audio information from audio sources to generate digital audio signals (col. 15, lines 10-13); transmitting the digital audio data signal from the audio connection devices to the interconnect hub (interconnect hub 1100 receives the digital audio data signal from the other nodes 1200 and 1300); and synchronously (1124, fig. 11) transmitting the digital audio data signals to each of the audio connection devices connected in a ring through the at least one interconnect hub using synchronous time division multiplex access (TDMA) communications (col. 14, lines 29-40, the digital audio data signals from node 1100 transmitted to other nodes 1200, 1300, and to the other audio connection devices such as the audio/video unit shown in fig. 12). As to claim 13, Lindsey teaches a fiber optic (col. 15, lines 39-44) concentrated ring (1500, fig. 10) configured as a star communication network (col. 30, lines 38-45) to a plurality of digital signal sources (the digitizer block 1123 in each of the nodes 1100, 1200, and 1300); a plurality of connection devices (audio/video unit 1111 of each of the nodes 1100, 1200, 1300) coupled to the fiber optic ring (1500, fig), each connection device receiving analog signals from at least one signal source and converting the received analog signals into digital data signals (col. 14, lines 29-33, col. 15, lines 10-12), each connection device comprises a digital signal processor (1123, fig. 11) for selective mixing of the signals received

from the signal source (col. 15, lines 3-8); and a central hub (for example, node 1100 in fig. 10) coupled to the fiber ring and receiving digital data signals for routing to the connection devices (node 1100 receives digital data from other nodes 1200 and 1300 and routes the data to the connected devices), the central hub comprising a bus synchronizer (1124, fig. 11) for synchronizing the routing of digital data signals through the fiber optic ring (col. 15, lines 3-8); wherein the plurality of connection devices are configured to provide communications among a plurality of signal sources (col. 32, lines 55-58); and wherein the central hub comprises a ring network connecting a plurality of fiber optic network connections (1150, 1500, fig. 10) coupled to the plurality of connection devices (connection devices in the respective nodes 1100, 1200, 1300); and wherein the central hub is configured to communicate the digital data signals to each of the audio connection devices in the ring using synchronous time division multiplex access communications (col. 13, lines 42-50, col. 14, lines 16-18).

Regarding claim 3, Lindsey teaches the interconnect hub comprises at least one second ring connecting the audio communication devices (the second ring 1500 that connects the nodes 1100, 1300, and 1200 in fig. 10).

Regarding claims 8 and 14, Lindsey further teaches the central hub comprises dual counter rotating fiber optic ring (1600, fig. 10) for single point failure protection (col. 32, lines 62-63).

Regarding claims 9 and 15, Lindsey further teaches a plurality of subloops equal in number to at least the plurality of connection devices, wherein each subloop couples to at least one the connection devices (for example, the subloops between node 1100 and respective signal sources V1, V5, FDDI, 4TI and 4E).

Regarding claims 10 and 16, Lindsey further teaches the central hub comprises a plurality of ports individually coupled to a subloop of the fiber optic ring (it is obvious that the central hub 1100 has a plurality of ports in order to be connected to fiber ring 1600 and the signal sources V1, V5, 4T1).

Regarding claims 11-12 and 17-18, Lindsey further teaches the system further comprising a plurality of control panels individually coupled to one of the plurality of connection devices (note that data connection devices such as audio/video unit 1111 of node 1100 is further connected to processing unit 1121, shown in fig. 11).

4. Claims 1, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Loscoe (US Patent No: 4,628,501).

Regarding claims 1, 4, and 7, Loscoe teaches a method of communicating audio information among a plurality of audio devices (col. 2, lines 20-25), comprising: providing at least one interconnect hub (7, fig. 2); providing a plurality of audio connection devices (for example, user stations U1 to U4, fig. 2) each of which is configured to connect to a plurality of separate audio signal sources and which is configured to provide communications among these separate audio sources (col. 2, lines 20-25, note that the system provides a full duplex communication between multiple users to carry signals such as voice and data); connecting the at least one interconnect hub (for example, coupler 7 in fig. 2) to the plurality of audio connection devices (U1, U2, U3, U4, fig. 2, user terminals transmit and receive voice signals to the network and from the network) to form a ring network of audio connection devices with the interconnect hub at the center of the ring network in a star configuration (col. 2, lines 60-66), wherein the

audio connection devices connect to each other through the at least one interconnect hub (7, fig. 2); digitizing audio information from audio sources to generate digital audio signals (col. 2, lines 23-24); transmitting the digital audio data signal from the audio connection devices to the interconnect hub (col. 2, lines 60-66); and synchronously transmitting the digital audio data signals to each of the audio connection devices connected in a ring through the at least one interconnect hub using synchronous time division multiplex access (TDMA) communications (col. 2, lines 65-66, col. 3, lines 26-51). As to claim 7, Loscoe teaches a digital fiber optic switching and distribution system (fig. 2) that is comprised of a fiber optic concentrated ring (for example, the ring network that is made of optical duplexers 21, star coupler 7, and fiber lines T1, T2, R1, and R2 in fig. 2) configured as a star communication network (col. 2, lines 60-66) to a plurality of digital signal sources (the signal sources that communicate with user terminals U1 and U2, not shown); a plurality of connection devices (U1, U2, fig. 2) coupled to the fiber optic concentrated ring (T1, R1 and T2, R2, fig. 2), each connection device receiving analog signals from at least one signal source and converting the received analog signals into digital data signals (col. 1, lines 14-20, col. 2, lines 20-24); and a central hub (7, fig. 2) coupled to the fiber optic concentrated ring and receiving the digital data signals for routing to the connection devices (col. 2, lines 60-66); wherein the plurality of connection devices are configured to provide communications among a plurality of signal sources (col. 3, lines 26-46); and wherein the central hub comprises a ring network connecting a plurality of fiber optic network connections (T1, R1, T2, R2, fig. 2) coupled to the plurality of connection devices (U1, U2, fig. 2); and wherein the central hub is configured to communicate the digital data signals to each of

the audio connection devices in the ring using synchronous time division multiplex access communications (col. 3, lines 41-51).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsey et al. (US Patent No: 6,226,296) in view of Arimilli (US Patent No: 5,757,801).

Regarding claims 2 and 6, Lindsey differs from the claimed invention in that Lindsey does not specifically teach transmitting a frame of data at a rate of 8 KHz. Arimilli teaches data can be transmitted at a rate of 8 KHz (col. 12, lines 15-20). It would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a data transmission rate of 8 KHz, as it is taught by Arimilli, for the data transmission in the communication system of Lindsey to transmit high quality data.

7. Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farleigh et al. (US patent No: 5,206,857) in view of Baran (US Patent No: 5,550,820).

Regarding claim 19, Farleigh teaches a digital fiber optic switching and distribution system (col. 3, lines 34-52, fig. 1), comprising: a first fiber optic concentrated ring (10, fig. 1) configured as a communication network to a plurality of signals sources (101, 102, fig. 1); a first plurality of connection devices (100, fig. 1 and 100, 600, 103, 104, fig. 2) coupled to the first

ring (10,fig. 1) and each receiving signals from at least one signal source (connection devices 104 and 103 receive signals from signal sources such as 101 and 102); a first central hub (col. 3, lines 45-46 and 200, figs. 1, 2) coupled to the first fiber ring (10, fig. 1) and receiving data signals for routing to the plurality of connection devices (hub 200 receives data signals from fiber rings 10 and 20 and routes the data signals to connection devices of unit 100); a second fiber optic concentrated ring (20, fig. 1) configured as a communication network to a plurality of signal sources(121, 122, fig.1); a second plurality of connection devices (connection devices in PBX 120, fig. 1) coupled to the second fiber ring (20, fig.1)for receiving signals from at least one signal source (PBX 120 receives signals from sources 121 and 122, fig. 1) and a second central hub (300, fig. 1) coupled to the second fiber ring and receiving data signals for routing to the second plurality of connection devices (second hub 300 receives data signals from fiber rings 10 and 20 and routes the data signals to connection devices of unit PBX 120), wherein the second central hub is coupled to the first central hub as a signal fiber optic switching and distribution system (the first central hub 200 is coupled to the second central hub 300 by through fibers 10 and 20); wherein the first and second plurality of connection devices are configured to provide communications among a plurality of signal sources (101, 102, 121, 122, fig. 1); and wherein the first and second central hubs comprise a ring network connecting a plurality of fiber optic network connections coupled to the plurality of connection devices (100, 120, fig.1); and wherein the first and second central hubs are configured to communicate the digital data signals to each of the audio connection devices in the ring using synchronous time division multiplex access (TDMA) communications (col. 5, lines 34-44). Farleigh differs from the claimed invention in that Farleigh does not specifically disclose the connection devices receive analog

signals from signal sources and converting the received analog signals into digital data signals. However, Farleigh discloses digital voice communication equipment at telephone offices typically use 8 KHz as the sampling frequency when carrying out analog-to-digital conversion (col. 7, lines 28-30). Baran teaches a telephone interface unit (62, fig. 3a) that includes an A/D converter (86, fig. 3a). Accordingly, it would have been obvious that voice signals that are received from signal sources (such as telephones 102, 121, 122) can be analog-to-digital converted by incorporating A/D converter interfaces in the connection devices or at an interface to connection devices, as it is taught by Baran, in order to provide digital data communication that can be further transmitted.

Regarding claim 20, Farleigh teaches a plurality of additional fiber optic concentrated rings (for example, 10, 20, 30, fig. 1) as a communication network to a plurality of signal sources (131, 132, fig. 1); a plurality of additional connection devices that are coupled to additional fiber rings for receiving analog signals from signal sources and converting the analog signals to digital data signals (130, fig. 1), and a plurality of additional central hubs (N/I 300, fig. 1) individually coupled to one of the additional fiber rings for receiving digital data signals and routing the signals to the connection devices (col. 4, lines 1-9).

Regarding claim 21, Farleigh teaches the first and second central hubs each comprises dual counter-rotating fiber optic ring (fiber rings 10 and 20 are counter-rotating rings, fig. 1) for a single point failure protection (col. 3, lines 20-26).

Regarding claim 22, Farleigh teaches a first plurality of control panels individually coupled to one of the first plurality of connection devices, and a second plurality of control panels individually coupled to one of the second plurality of connection devices (for example, control

units 210 and 240 are connected to processor 103 and clock recovery circuit 600 through lines 60 and 70).

Regarding claim 23, Farleigh teaches each of the first and second plurality of control panels has access to each of the first and second plurality of connection devices (each of the control panels 210 and 240 has access to node processor 103 and clock recovery circuit 600, respectively).

Regarding claim 24, Farleigh teaches each of the first and second fiber optic concentrated rings comprises a plurality of subloops equal in number to at least the plurality of first or second connection devices, respectively (for example, the respective subloops 30 and 40 that are connected to ring fibers 10 and 20).

Regarding claim 25, Farleigh teaches the first and second central hubs each comprises a plurality of ports individually coupled to a subloop of the first or second fiber optic concentrated ring respectively (the network interfaces 200 and 300, or the first and second central hub, each has ports that are individually coupled to rings 10 and 20 that are further coupled to a subloop 30.

Regarding claim 26, Farleigh teaches each of the first and second plurality of connection devices comprises a digital signal processor (103, fig. 2) for selective mixing of signals received from the at least one signal source (col. 5, lines 23-39).

Regarding claim 27, Farleigh teaches the first and second central hubs each further comprises a bus synchronizer (104, fig. 2) for synchronizing the routing of data frame through the respective first or second ring (col. 5, lines 34-44).

8. Applicant's arguments filed 1/9/06 have been fully considered but they are not persuasive.

Remark states Lindsey does not disclose a concentrated star network hub that uses synchronous TDMA communications. Lindsey discloses a network formed with a plurality of time division multiplexer-demultiplexer systems (col. 3, lines 66-67, col. 4, lines 1-2) including a multiplexer 1100 that can function as a hub in a ring network 1400 to transmit and receive TDMA signals between other nodes such as nodes 1200 and 1300 (col. 13, lines 33-40, col. 14, lines 16-25). Lindsey further teaches the system can be used as a star network configuration (col. 32, lines 10-23) for synchronous TDMA communications (col. 14, lines 16-35). Remark further states Farleigh discloses an asynchronous fiber optic ring and does not appear to disclose all of the feature of the claimed invention. Farleigh discloses a synchronous and asynchronous interface 104 that contains circuitry needed to buffer information between a memory 230 and a synchronous time division multiplexed bus (col. 5, lines 34-37). Farleigh further discloses a terminal 101 and a telephone 102 represent the kinds of services that might be connected to such bus (col. 5, lines 37-39).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER